

Getting Started With The Create 3 Education Robot



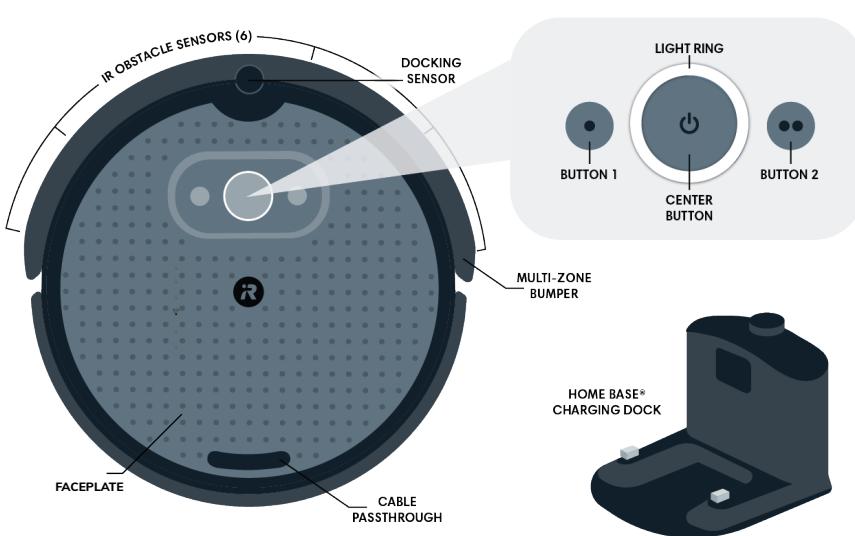
Welcome to the next generation of iRobot's affordable, trusted, all-in-one mobile robot development platform. Grasp the fundamentals of robotics, computer science, and engineering by programming the Create® 3 to perform simple behaviors, sounds, and movements, or tap into advanced applications including multi-robot exploration, navigation & mapping, and telepresence capabilities.

This guide will show you:

- Hardware Overview
- Power on/ Power off
- Charge
- Faceplate/ Cargo Bay Removal
- Update Firmware
- Programming Platform Options
- Code Your First Project
- Learning Library/ FAQ

For support with advanced functionality, such as detailed hardware/software specs, ROS 2 APIs, third party hardware connections and more, explore our [Advanced Create 3 Resource Site](#).

Hardware Overview



Buttons 1 & 2

Programmable buttons for the user. Button 1 also used to set robot in Standby mode.

Center Button

Programmable button that can also be used to power down.

IR Obstacle Sensors

Sensors can detect levels of light blocked by obstacles of different material.

Cable Passthrough

Thread connectors between hardware on faceplate and bin.

Home Base™ Charging Dock

The Create 3 Home Base™ Charging Dock and the Charging Dock cable are used to power on and charge the robot.

Docking Sensor

IR sensor to locate Charging Dock.

Light Ring

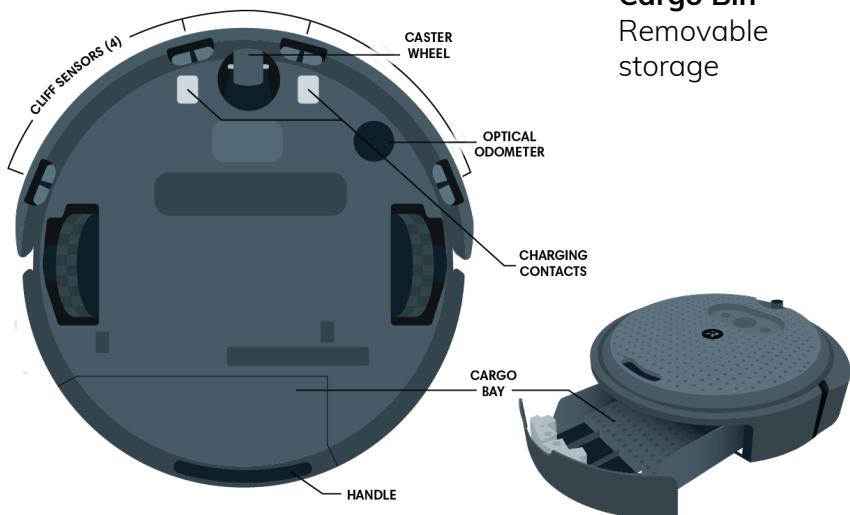
The Light Ring glows different colors and patterns to communicate robot status and/or errors. Users can also program the light.

Faceplate

Removable top of robot.

Multi-Zone Bumper

Bumper contains multiple sensors to detect obstacle collisions.



Cargo Bay/ Cargo Bin

Removable storage

Cliff Sensors

Sensors detect ledges to help protect against falls.

Caster Wheel

Non-programmable wheel to maintain balance.

Optical Odometer

Sensor to detect location and orientation of robot

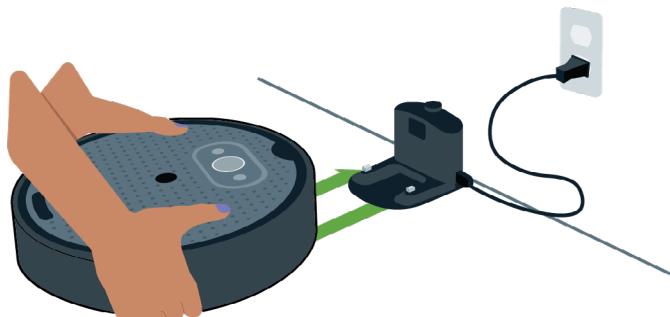
Charging Contacts

Used for wireless charging at the Home Base Charging Dock

Power On/ Standby Mode/ Storage Mode

Assemble Charging Dock

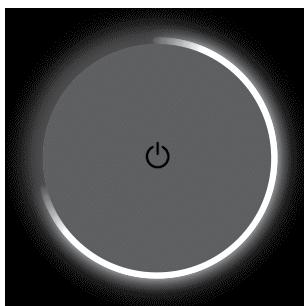
Insert the charging dock cable into the charging dock and the electric plug into a power outlet.



Power On

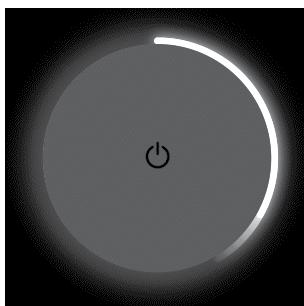
To power on your robot, place on the charging dock. The green LED on the dock will glow green to indicate successful connection, and the robot's Light Ring should glow a bright spinning light.

The Light Ring will continue to spin as the robot boots up. When the process is complete, the robot will chime its "Happy Sound." The Ring Light will then transition to a slower spinning white light if still on the charging dock, or a solid white light when removed.



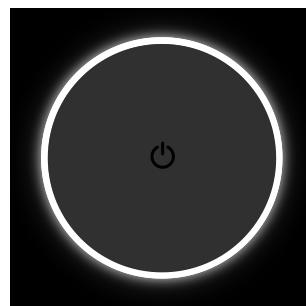
Spinning White

Robot is booting up. Wait for "Happy Sound" to play.



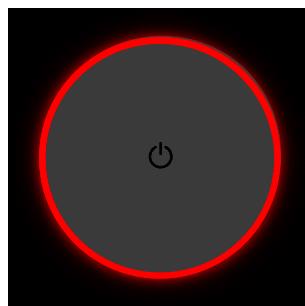
Partial White

Robot is charging
(Example shows 40%)



Solid White

Robot is 100% charged



Pulsing Red

Battery < 10%

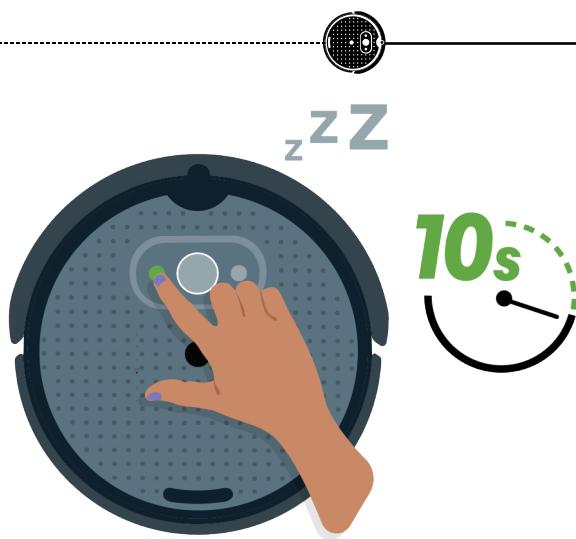
Standby Mode

Standby Mode (or Low Power Mode) can be used to extend your robot's battery without completely powering down. To enter this mode, press and hold Button 1 for ten (10) seconds. After ten seconds, the Light Ring should turn off.

In this state, your robot will keep its payload power alive and will be able to charge, but will not respond to Wi-Fi, USB or Bluetooth. When fully charged, your robot's battery should last about 100 hours in Standby Mode when not connected to the charging dock.

To exit Standby Mode, press and hold the center button for one (1) second.

NOTE: Standby Mode is not intended for long-term storage.



Storage Mode

In Storage Mode (or Power Off), your robot's battery will power down completely. To enter this mode, press and hold the center button for seven (7) seconds. The Light Ring will pulse bright white three (3) times and then play the "power down" sound. After ten seconds, the Light Ring should turn off.

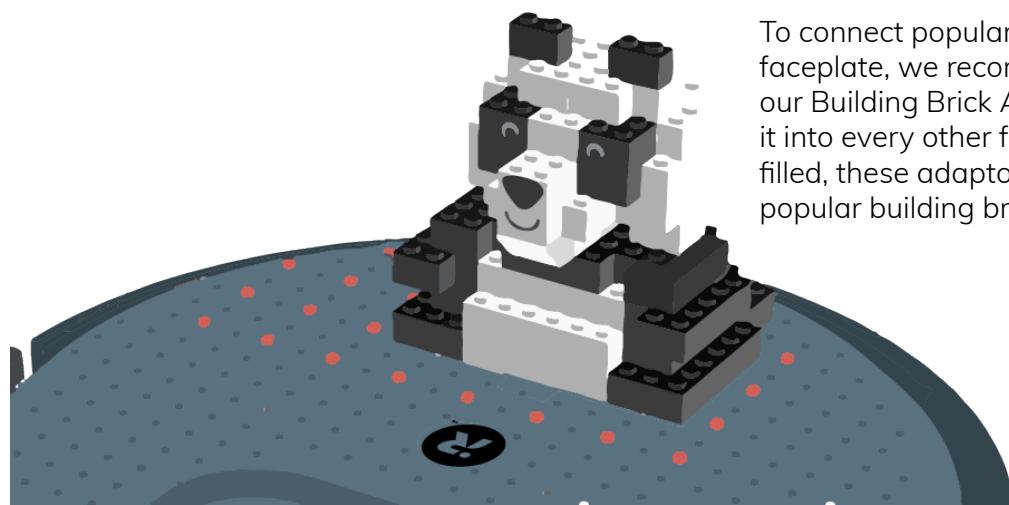
NOTE: The robot must be placed on the charging dock to exit Storage Mode.



Faceplate/ Cargo Bay

Faceplate

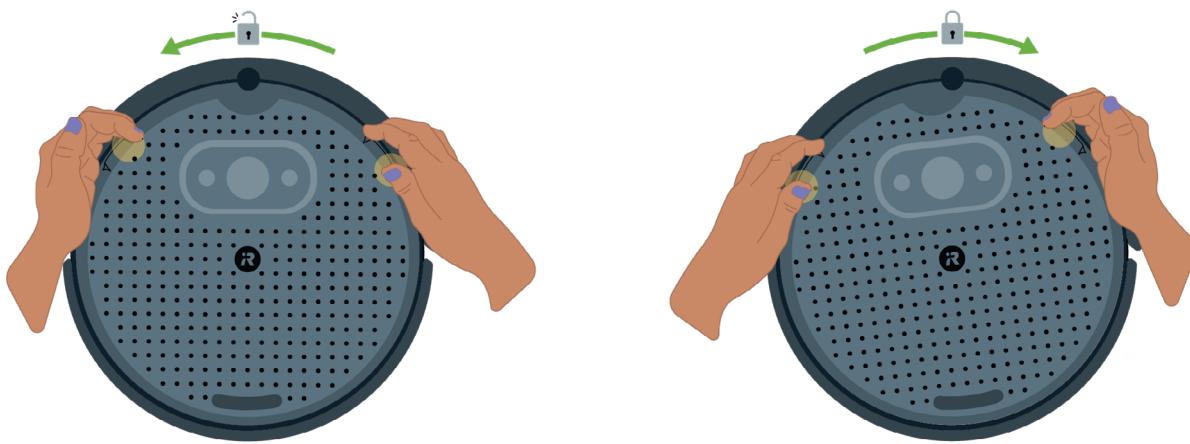
The robot's faceplate can be removed and replaced easily, making it the ideal platform for attaching external hardware, engineering projects, costumes/art creations, and more.



To connect popular building bricks to the faceplate, we recommend 3D printing our Building Brick Adaptor and inserting it into every other faceplate hole. When filled, these adaptors will connect to popular building brick systems.

Faceplate Placement/ Removal

To remove the Create 3 faceplate, place your thumbs on the turn tabs as shown in the diagram below on the left. Push to turn in a counter-clockwise direction.

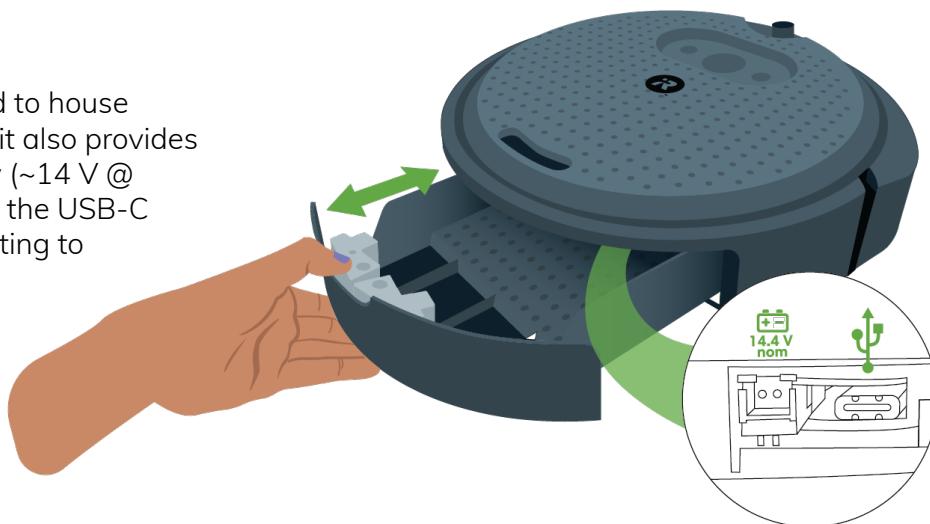


To replace, lightly position the faceplate rotated approximately five (5) degrees off-center, as shown in the diagram (do not apply downward force). Place your thumbs on the turn tabs and push to turn in a clockwise direction. You should feel the faceplate 'click' into place when centered.

Cargo Bay

The Cargo Bay can be used to house electronics. When opened, it also provides access to the power supply (~14 V @ 2 A max.) for payloads and the USB-C Connection Port for connecting to compute boards.

For a seamless design, you can thread any wires connecting Cargo Bay contents to Faceplate attachments through the cable passthrough.

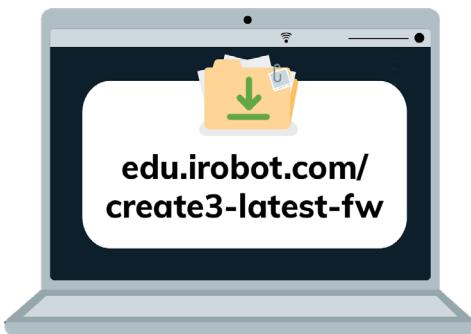


The Cargo Bay is equipped with the same hole pattern as the Faceplate, providing the opportunity to use screws or 3d-printed trays to mount compute boards or other electronics in place.

To remove the bin, pull it backward firmly from the handle. To replace, align tray with inner tracks and press forward until it 'clicks' into place.

Update Robot's Firmware

Follow the instructions below to ensure the most up-to-date bug fixes and user-experience improvements.



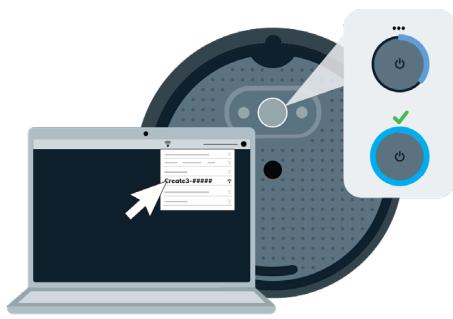
Step 1

To ensure your robot is up to date, download the latest firmware package from edu.irobot.com/create3-latest-fw



Step 2

Place Robot on charging dock. Press and hold Buttons 1 & 2 to activate your robot's access point. The Light Ring will show spinning blue.



Step 3

Open your computer's wifi menu and connect to your robot listed as Create-[xxx]. Once connected, your robot's light ring will glow solid cyan. **This will disconnect your device from the internet.**



Step 5

Navigate to the Update tab. Follow the steps on the page to upload the file downloaded in Step 1. The Light Ring will show spinning blue while updating. This may take several minutes.



Step 6

The robot will disconnect itself from your computer and your computer should reconnect to your default Wi-Fi network. The Light Ring will glow solid white and the robot will play its 'Happy Sound' when update is complete.

Programming Platform Options

The Create 3 Education Robot was designed to serve a variety of learners and therefore supports a variety of programming platforms.

| Platform | Ideal For: | Connection: | Compatibility: | Get Started: |
|---|--|---------------------------------|-----------------------------------|---|
|  iRobot Coding App Code across three learning levels, from simple graphic blocks to drag & drop Python, as you build basic events-based coding projects. | Beginners looking to grasp coding and robotics fundamentals | Bluetooth™ | iOS, Android, Chrome Web App | Create 3 Compatibility Arriving September 2022 |
|  Python Web Playground Connect to and code with your robot seamlessly in this browser-based Python coding environment. | Intermediate coders with Python experience | Bluetooth™ | Chrome Web App | Visit the iRobot Education Learning Library |
|  Native Python 3 SDK Take Python projects to the next level with imported libraries and more with the downloadable, natively installed iRobot Education Python 3 SDK. | Intermediate/ Advanced users looking to code in Python with imported libraries | Bluetooth™ | Mac, Windows, Linux | Arriving June 2022 |
|  ROS 2 Program with ROS 2, the industry-standard communication protocol for advanced robotics, utilizing our ready-to-go examples, API's, nodes and simulator. | Advanced users with Linux experience | Wi-Fi, Ethernet over USB-C Host | Linux supported with instructions | Visit the iRobot Education Learning Library |

Coding The First Project - Python Web Playground

A NOTE TO CLASSROOMS

If running multiple Create robots, complete all of the steps below for one robot at a time to avoid connection errors.

Step 1

Confirm that your computer's Bluetooth™ setting is "on."

[Bluetooth for Windows](#)

[Bluetooth for Mac](#)

[Bluetooth for Linux](#)

Step 2

Follow the "[Power On](#)" instructions on page 2. Wait for your robot to fully boot up and play its "Happy Sound" before proceeding.

Step 3

Follow the "[Update Robot's Firmware](#)" instructions on page 5. Wait for your robot's Light Ring to return to white and for the "Happy Sound" to play.

Step 4

Confirm that your robot is in Bluetooth Mode. You can check this by looking for a blue light glowing through the faceplate on the back-right side of your robot. If no blue light is glowing, [remove the faceplate](#) and manually set the switch on the Adaptor Board to the Bluetooth logo on the right.

You'll Need:

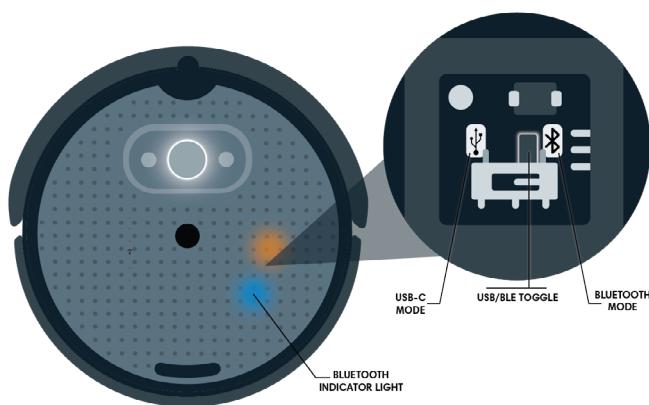
Home Base® Charging Dock

Charging Dock Cable

Create 3 Education Robot

Computer with Bluetooth™ Compatibility

Google Chrome Browser ([Download here](#))



Step 5

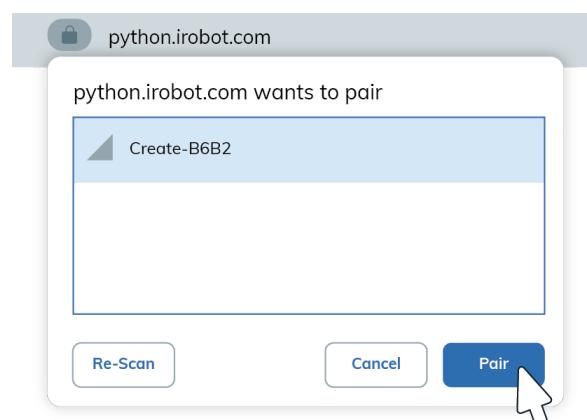
Open Google Chrome in a new window and navigate to python.irobot.com.

Step 6

Click on the Connect button to open the Google Chrome Bluetooth manager. Your robot should appear in the device menu after ~30 seconds under its default device name, or as "Unsupported Device." Select the robot's name and click the Pair button.

Step 7

Press play to run the example code project. Try pressing your robot's bumpers. When you press on the right side of the bumper, your robot's Ring Light should glow red and the robot should begin to spin clockwise. What happens when you press on the left side?



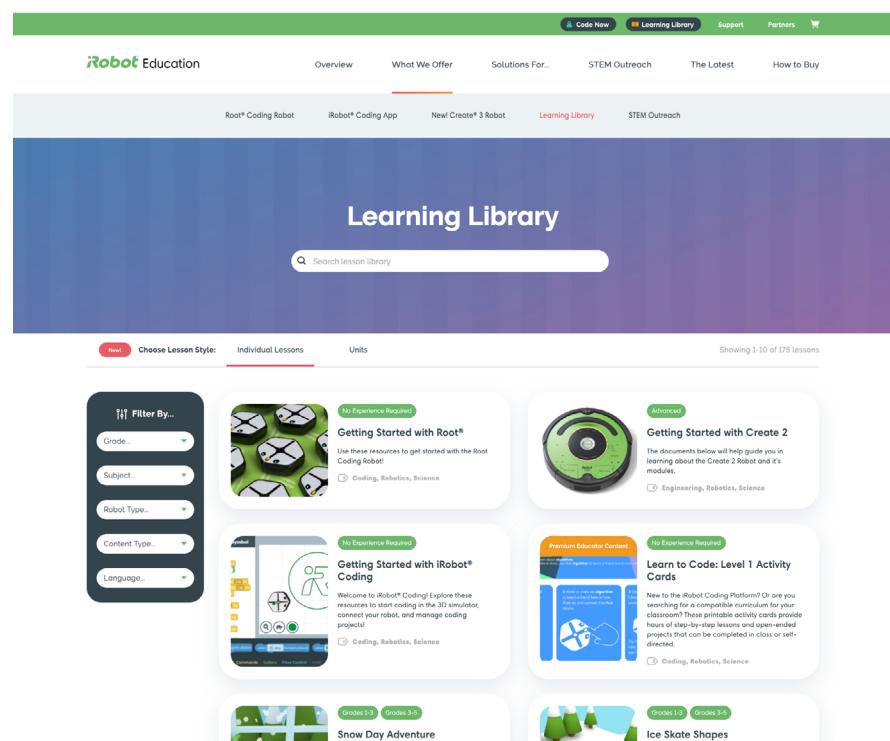
Step 8

Congratulations, you have run your first program with Create 3! To go further, explore our example code snippets and the Python Web Playground glossary to learn more about all of the available commands. Happy Coding!

Learning Library/ FAQ's

Learning Library

You can find helpful tutorials, guides and project ideas for Create 3 in the [iRobot Education Learning Library](#).



The screenshot shows the 'Learning Library' section of the iRobot Education website. At the top, there are navigation links: Overview, What We Offer, Solutions For..., STEM Outreach, The Latest, and How to Buy. Below these are sub-links for Root® Coding Robot, iRobot® Coding App, New Create® 3 Robot, Learning Library (which is highlighted in red), and STEM Outreach. A search bar at the top right says 'Search lesson library'. The main area has a blue-to-purple gradient background and displays several lesson cards. On the left, there is a 'Filter By...' sidebar with dropdown menus for Grade, Subject, Robot Type, Content Type, and Language. The lessons shown include:

- Getting Started with Root®**: No Experience Required. Use these resources to get started with the Root Coding Robot! Coding, Robotics, Science.
- Getting Started with Create 2**: Advanced. The documents below will help guide you in learning about the Create 2 Robot and its modules. Engineering, Robotics, Science.
- Getting Started with iRobot® Coding**: No Experience Required. Welcome to iRobot® Coding! Explore these resources to start coding in the 3D simulator, connect your robot, and manage coding projects! Coding, Robotics, Science.
- Premium Educator Content**: Learn to Code: Level 1 Activity Cards. Premium Educator Content. New to the iRobot Coding Platform? Or are you searching for a compatible curriculum for your classroom? These printable activity cards provide hours of step-by-step lessons and activities for a project that can be completed in-class or self-directed. Coding, Robotics, Science.
- Snow Day Adventure**: Grades 3-5. Snow Day Adventure.
- Ice Skate Shapes**: Grades 3-5. Ice Skate Shapes.

Frequently Asked Questions

See our FAQ guide on the [Create 3 Support Guide](#).



Education

Getting Started with the Create 3 Education Robot Guide
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Contact education@irobot.com with questions.

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